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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,554	10/03/2005	Hubert Lauvray	125457	4724
25944 7590 10/31/2007 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850			EXAMINER TRINH, THANH TRUC	
			ART UNIT 1795	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/551,554

Applicant(s)

LAUVRAY ET AL.

Examiner

Thanh-Truc Trinh

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22-42 is/are pending in the application.
- 4a) Of the above claim(s) 31-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/3/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 22-30, drawn to photovoltaic module.

Group II, claim(s) 31-42, drawn to method for production of a photovoltaic module.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: there is no common special technical features between the product and the method, and because all features of claim 22 are anticipated by Yoda et al. (PGPub 20030010378).

During a telephone conversation with the Applicant's representatives, Mr. David Kemnemy and Justin Lingard, a provisional election was made with traverse to prosecute the invention of Group I, claims 22-30. Affirmation of this election must be made by applicant in replying to this Office action. Invention of Group II is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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Application is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 29 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 26 recites limitation "the corresponding plate" which is unclear to which plate is the corresponding plate, the front plate or the back plate.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 22-23 and 25-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoda et al. (PGPub 20030010378)

Regarding claims 22-23, as seen in Figures 1-4, Yoda et al. disclose a photovoltaic module (2) comprising an assembly of photovoltaic cells (11), arranged

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side by side between front and rear plates (21 and 22), and a seal (31) arranged between the plates and delineating a tight internal volume (2A), kept at a pressure lower than atmospheric pressure (or vacuum state – See paragraph 0064), wherein the photovoltaic cells (11) are arranged. Yoda et al. also describes the sealing (primary seal 31) can be made of polysulfide or rubber (See paragraph 0064), therefore it is the Examiner's position that the seal (31) is a flexible organic seal, thermoplastic in nature.

Regarding claim 25, as seen in Figures 1-4, Yoda et al. discloses second seal (32) arranged around the seal. (See paragraphs 0063-0064)

Regarding claim 26, Yoda et al. discloses the front and rear plates (21 and 22) are formed by glass. (See paragraph 0057).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoda et al. in view of Gittings et al. (PGPub 20030079772).

Yoda et al. disclose a photovoltaic module as described in claim 22.

Yoda et al. do not teach the seal is a member of the polybutylene family.

Gittings et al. teach a photovoltaic module with the edge sealing (10) arranged between substrates (2 and 3) and delineating a tight internal volume (3), wherein the edge sealing is made of butyl rubber or polyisobutylene material, which are members of polybutylene family.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the module of Yoda et al. by using butyl rubber or polyisobutylene material as a material for sealing as taught by Gittings et al., because it would provide a photovoltaic device with a seal that is highly resistive to moisture penetration. (See paragraph 0014)

3. Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoda et al. in view of Burns et al. (US Patent 5816238).

Yoda et al. discloses a photovoltaic module as described in claim 22.

Yoda et al. do not specifically disclose a substance absorbing infrared and ultraviolet radiation and emitting a radiation in a visible spectral band, nor does he teach the substance comprises one material chosen from polymethyl methacrylate (PMMA), metallic salts, mixed oxides of rare earths, alkaline metals or metals belonging to the alkaline earths.

Burns et al. teach a substance used in solar cells (See col. 3 lines 7-13 and col. 4 lines 47-61) for absorbing infrared and ultraviolet radiation, and emitting a radiation in a visible spectral band. (See col. 3 line 7 to col. 4 line 61). Burns et al. also teach the substance comprises PMMA. (See Comparative Example 10).

It would have been obvious to one skilled in the art at the time the invention was made to modify the module of Yoda et al. by incorporating a substance that can absorb infrared and ultraviolet radiation and emit a radiation in a visible spectral band as taught by Burns et al., because it would provide a photovoltaic module (or solar collectors) having an ability to fluoresce for a longer period than normally expected when exposed to direct sunlight. (See col. 2 lines 5-13)

4. Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoda et al. in view of Amick (US Patent 4301322).

Yoda et al. discloses a photovoltaic module as described in claim 22, wherein the photovoltaic cells are connected by conductor leads 6 as seen in Figure 1.

Yoda et al. is silent about the interconnecting conductor formed by rigid material and having a profiled shape so as to obtain a spring effect between the photovoltaic cells and the corresponding plate, and one of the ends of a interconnecting conductor is undulating.

Amick teaches interconnecting conductors (or corrugated bus 10) formed by rigid material (such as copper, gold, silver – See col. 4 lines 4-14) and having a profiled shape (corrugated, as seen in Figures 1-6) so as to obtain a spring effect (or flexibility –

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See col. 4 lines 14-19). Amick also teaches the interconnecting conductor (10) connecting a front surface of a first cell and a rear surface of an adjacent cell, and one end of the interconnecting conductor 10 being undulating. (See Figures 1-6)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the module of Yoda et al. by using interconnecting conductors having one undulating end as taught by Amick because it would improve electrical current collection in solar cells by providing stress relief when secured to the solar cell's surface. (See col. 3 lines 30-42).

In the combination of Yoda et al. and Amick, it would certainly have been obvious to one skilled in the art that the interconnecting conductors have a profiled shape (corrugated) as to obtain a spring effect between the photovoltaic cells and the corresponding plate, and the first end of the interconnecting conductor is arranged between the front face of the first cell and the internal face of the front plate and a second end of the interconnecting conductor is arranged between the second cell and the internal face of the rear plate.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh-Truc Trinh whose telephone number is 571-272-6594. The examiner can normally be reached on 8:30 am - 5:00 pm.




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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TT  
10/19/07

  
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